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1743

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Date of Deposit: December 1, 2003
Attorney Docket No.: C0989.70031US00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chan et al.
Serial No: 09/783,472
Confirmation No: 1318
Filed: February 14, 2001
For: METHODS AND APPARATUS FOR
CHARACTERIZATION OF SINGLE POLYMERS
Examiner: Jan M. Ludlow
Art Unit: 1743

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL

Sir:

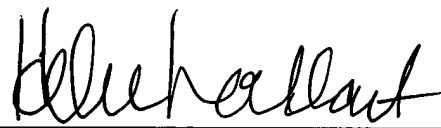
Transmitted herewith are the following document(s):

- [✓] Statement Filed Pursuant to the Duty of Disclosure Under 37 CFR §§ 1.56, 1.97 & 1.98;
- [✓] Form PTO-1449, Copies of references cited;
- [✓] Check in the amount of \$180.00; and
- [✓] Return Receipt Postcard

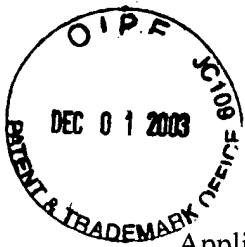
If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 720-3500, Boston, Massachusetts.

A check in the amount of \$180.00 is enclosed. If any further amount is owed, please charge the amount to the account of the undersigned, Deposit Account No. 23/2825. A duplicate of this sheet is enclosed.

Respectfully submitted,
Chan et al., Applicants

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Docket No: C0989.70031US00
Date: December 1, 2003
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STATEMENT FILED PURSUANT TO THE DUTY OF
DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, the Applicant requests consideration of this Information Disclosure Statement.

Compliance with 37 C.F.R. §1.97

This Information Disclosure Statement has been filed more than three months after the filing date of this application and after the mailing date of the first Office Action, but before the mailing date of either a final action under 37 C.F.R. §1.113 or a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in this application.

The fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) is enclosed.

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Information Cited

The Applicant hereby makes of record in the above-identified application the information listed on the attached form PTO-1449 (modified). The order of presentation of the references should not be construed as an indication of the importance of the references.

The Applicant would like to bring to the Examiner's attention the following co-pending applications that may contain subject matter related to this application (Copies enclosed):

Docket Number	Serial Number	Filing Date	Inventor(s)
C0989.70011US00	09/373,822	08/13/99	Tegenfeldt et. al.
C0989.70014US00	09/373,7002	08/13/99	Chan
C0989.70016US00	09/852,968	05/10/01	Chan
C0989.70017US00	09/875,779	06/6/01	Chan et al.
C0989.70020US00	10/165,914	06/10/02	Shia et al.
C0989.70021US00	10/166,567	06/10/02	Wong
C0989.70028US00	10/421,644	04/23/03	Gilmanshin et al.
C0989.70030US00	09/636,793	08/11/00	Chan et al.
C0989.70032US00	09/783,930	02/15/01	Gilmanshin et al.
C0989.70035US00	10/246,779	09/18/02	Chan et al.
C0989.70036US00	09/928,668	08/13/01	Chan
C0989.70049US00	10/448,264	05/28/03	Chan

Remarks

Documents cited anywhere in the Information Disclosure Statement are enclosed unless otherwise indicated. It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
2. The enclosed form PTO-1449 be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;

3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

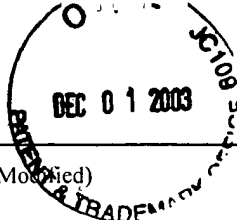
An early and favorable action is hereby requested.

Respectfully submitted,
Chan et al., *Applicant*

By: 

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Date: December 1, 2003
XNDDX



FORM PTO-1449/A and B (Modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT				APPLICATION NO.: 09/783,472		ATTY. DOCKET NO.: C0989.70031US00	
				FILING DATE: February 14, 2001		CONFIRMATION NO.: 1318	
				APPLICANT: Chan et al.			
				GROUP ART UNIT: 1743		EXAMINER: Jan M. Ludlow	
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U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication or of issue of Cited Document MM-DD-YYYY
		Number	Kind Code		
	*	60/149,020		Chan et al.	08/13/99
	*	09/374,902		Gilmanshin et al	08/13/99
	*	09/373,822		Tegenfeldt et al.	08/13/99
	*	60/120,414		Tegenfeldt et al.	02/14/99
	*	60/096,544		Tegenfeldt et al.	08/13/98
	*	09/134,411		Chan	08/13/98
	*	5,851,769		Gray et al.	12/22/98
	*	5,846,724		Bensimon et al.	12/08/98
	*	5,840,862		Bensimon et al.	11/24/98
	*	5,837,115		Austin et al.	11/27/98
	*	5,795,782		Church et al.	08/18/98
	*	5,707,797		Windle	01/13/98
	*	5,599,664		Schwartz	02/04/97
	*	5,538,898		Wickramasinghe et al.	07/23/96
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	*	5,079,169		Chu et al.	1/7/92
	*	5,846,832		Oefner et al.	12/08/98
	A1	6,210,896	B1	Chan	04/03/01
	A2	6,355,420	B1	Chan	03/12/02
	A3	6,403,311	B1	Chan	06/11/02

FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
		Office/ Country	Number	Kind Code			
	*	PCT	WO 00/09757			02/24/00	
	*	PCT	WO 98/35012			08/13/98	
	*	PCT	WO 97/06278			02/20/97	
	*	PCT	WO 93/22463			11/93	
	*	EPO	EP 0391674			10/10/90	

OTHER ART — NON PATENT LITERATURE DOCUMENTS

Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
	*	Austin et al., 1997, "Stretch Genes", Physics Today 50:32-38	
	*	Austin and Volkmuth, 1993, "Electrophoresis and microlithography", Analysis 21:235-238	
	*	Bakajin et al., 1998, "Electrohydrodynamic stretching of DNA in confined environments", Phys. Rev. Lett: 80:2737-2740	



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Sheet	2	of	3				

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	*	Bensimon et al., 1995 "Stretching DNA with a receding meniscus: experiments and models", Phys. Rev. Lett 74:4754-4757	
	*	Bensimone et al., 1994, "Alignment and sensitive direction of DNA by a moving interface", Science 265:2096-2098	
	*	Bustamante et al., 1994, "Entropic elasticity of lambda-phage DNA", Science 265:1599-1600	
	*	Chou et al., 1999, "A microfabricated device for sizing and sorting DNA molecules", Proc. Natl. Acad. Sci. USA 96: 11-13	
	*	Chu, 1991, "Laser manipulation of atoms and particles", Science 253: 861-866	
	*	Cluzel et al., 1996, "DNA: an extensible molecule", Science 271:792	
	*	Deen, 1998, <i>Analysis of Transport Phenomena</i> , Oxford University Press, NY, pp. 275-278	
	*	Duke et al., 1998, "Microfabricated sieve for the continuous sorting of macromolecules", Phys. Rev. Lett. 80:1552-1555	
	*	Ertas, 1998, "Lateral separation of macromolecules and polyelectrolytes in microlithographic arrays", Phys. Rev. Lett. 80:1548-1551	
	*	Grandbois et al., 1999 "How strong is a covalent bond?" Science 283:1727-1730	
	*	Harrison et al., 1992, "Capillary electrophoresis and sample injection systems intergrated on a planar glass chip", Anal. Chem. 64:1926-1932	
	*	Hatfield and Quake, 1999, "Dynamic properties of an extended polymer solution", Phys. Rev. Lett. 82:3548-3551	
	*	Houseal et al., 1989, "Real-time imaging of single DNA molecules with flourescence microscopy", Biophys. J. 56:507-516	
	*	Jacobson et al., 1995, "Fused quartz substrates for microchip electrophoresis", Anal. Chem. 67:2059-2063	
	*	Kabata et al., 1993, "Visualization of single molecules of RNA polymerase sliding along DNA", Science 262:1561-1563	
	*	Kim et al., 1990, "Intermediates in the folding reactions of small proteins", Annu. Rev. Biochem. 59:631-660	
	*	Lyon et al., 1997, "Confinement and detection of single molecules in submicrometer channels", Anal. Chem. 69:3400-3405	
	*	Marko, 1998, "DNA under high tension: overstretching, undertwisting, and relaxation dynamics", Physical Rev. E 27:2134-2149	
	*	Marko et al., 1995, "Stretching DNA", Macromolecules 28:8759-8770	
	*	Parra et al., 1993, "High resolution visual mapping of stretched DNA by fluorescent hybridization", Nature Genet. 5:17-21	
	*	Perkins et al., 1994, "Direct observation of tube-like motion of a single polymer chain", Science 264:819-822	
	*	Schmalzing et al., 1998, "DNA sequencing on microfabricated electrophoretic devices", Anal. Chem. 70:2303-2310	
	*	Schmalzing et al., 1997, "DNA typing in thirty seconds with a microfabricated device", Proc. Natl. Acad. Sci. USA 94:10273-10278	
	*	Schwartz et al., 1993, "Ordered restriction maps of <i>Saccharomyces cerevisiae</i> chromosomes constructed by optical mapping", Science 262:110-114	
	*	Schwartz et al., 1989, "Conformational dynamics of individual DNA molecules during gel electrophoresis", Nature 338:520-522	
	*	Seiler et al., 1993, "Planar glass chips for capillary electrophoresis: repetitive sample injection, quantitation and separation efficiency", Anal. Chem. 65:1481-1488	
	*	Smith et al., 1999, "Single-polymer dynamics in steady shear flow", Science 283:1724-1727	
	*	Smith et al., 1998, "Response of flexible polymers to a sudden elongational flow", Science 281:1335-1340	



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	*	Smith et al., 1992, "Direct mechanical measurements of the elasticity of single DNA molecules by using magnetic beads", Science 258:1122-1126	
	*	Smith et al., 1989, "Observation of individual DNA molecules undergoing gel electrophoresis", Science 243:203-206	
	*	Tan et al., 1996, "Nanoscale Imaging and Sensing by Near-Field Optics", in : <u>Flourescence Imaging: Spectroscopy and Microscopy</u> , Wang and Herman, eds., Chemical Analysis Series 137:407-475	
	*	Volkmuth et al., 1994, "DNA electrodiffusion in a 2D array of posts", Phys. Rev. Lett. 72:2117-2120	
	*	Volkmuth et al., 1992, "DNA electrophoresis in microlithographic arrays", Nature 358: 600-652	
	*	Washizu et al., 1995 "Applications of electrostatic stretch-and-positioning of DNA", IEEE Trans. Industry Applications 31:447-456	
	*	Washizu et al., 1990, "Electrostatic manipulation of DNA in microfabricated structures", IEEE Trans Industry Applications 26:1165-1172	
	*	Woolley et al PNAS 91:11348-11352	
	*	Zimmerman et al., 1994, "DNA stretching on functionalized gold surfaces", Nucl. Acids. Res. 22:492-497	
	*	Fisher88, Fisher Scientific Catalog (1988), p. 861.	
	CI	Office Action 01/14/2003 Paper #10 Appl. 09/636,793 Filed 08/11/2000	

EXAMINER	DATE CONSIDERED
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#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. 09/636,793, filed August 11, 2000, and relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).